

THE EUGENICS REVIEW

How should our Society now strive to advance?*

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At a recent meeting of our Council the opinion was expressed that it might be useful if the aims of our Society were to be set forth once again in general terms. It was not intended, I think, that an attempt should be made to frame a rigid definition of our policy; for by restricting our action that might prove on the whole to be harmful rather than beneficial. What is perhaps now needed is a sign post with arms pointing to the various main roads along which our Society should strive to advance, together with some indication as to how that advance can best be conducted.

The first words which I uttered as your President just ten years ago were that heredity should be the guiding star of our Society, and in that opinion I have never faltered. A good deal of progress has been made since that date, and now the man who calls himself well-educated is as a rule beginning to have some dim idea that all human beings are the product of two factors, heredity and environment, and that consequently to both of them some attention should be paid. Now if our Society only accepts one of these factors, namely heredity, as the foundation on which all its operations ought to be built, yet we should as individuals most clearly emphasize the fact that all those who are striving to improve human surroundings have our warm sympathy. Of course eugenists cannot approve of such measures as would injure mankind as a whole, the future as well as the present being taken into account; but, putting that possibility aside, we personally give our blessing to many reforms which our Society does not help to promote. We see as clearly as anyone that the idea of producing a race with the best possible natural qualities would be futile if no thought were to be given to the surroundings of the individuals of that race when it did appear. If our Society confirms its attention exclusively to heredity, it is only because so many other Societies think only of environment.

It is true that it may be sometimes necessary to indicate that the high hopes entertained by reformers are not justified by past experiences. It may be said with only a microscopic divergence from the

*Being the address delivered at the Annual Meeting of the Society in June: His address was followed by papers from Mr. R. Dixon-Kingham and Mr. E. J. Lidbetter. The remarks which Mr. R. A. Fisher was unavoidably prevented from delivering are also included. Major Darwin covered a good deal of the same ground in the address which he delivered at New York in September before the International Congress of Eugenics.

truth that all reforms since civilization began have been based on attempts to improve human surroundings; and we may ask those who found their hopes for the future only on changes being made in environment to consider how much has thus been accomplished since history began. As to our highest moral ideals, is it not true that for the most part they have been promulgated in certain eastern countries ever since the dawn of civilisation? How do we compare in intellect with the inhabitants of ancient Greece two thousand years ago? With a knowledge of the delights of country life, can we look on our slums with anything but shame? Do we not blush to talk of peace on earth and goodwill towards men whilst remembering what has happened during the last seven years? And, in view of all this, have we any right to assume that improvements of environment will do more for mankind during the next two thousand years than they have done since the days of Plato? Reformers who look only to surroundings should consider well the foundations on which their projects are based before pointing the finger of scorn at the believers in heredity. Eugenics has been called a dismal science, but it should rather be described as an untried policy. Eugenics indicates a new method of striving for human welfare which, if combined with an equal striving for improvements in human surroundings, more truly justifies a hopeful outlook than anything which has yet been tried in the whole history of the world. More hopeful, that is, if the roads to which our eugenic finger post is pointing are not as studiously avoided in the future as they have been in the past.

The main eugenic sign post which we wish to erect should, in my opinion, have three arms on it, pointing to three main lines along which an advance should be pressed forward. In the first place the public should be made to realize more and more fully what a potent influence heredity has on the fate of all nations. In the second place efforts must be made to ascertain and to make known the rules by which each individual ought to strive to regulate his own conduct in regard to parenthood in accordance with the laws of heredity in so far as now surely known. Lastly the action which the state should take in order to stimulate or to enforce conduct productive of racial progress must be considered, a line of advance to be advocated, however, with great circumspection where compulsion is concerned. Then as to the method of endeavouring to move forward along these three main roads, this we should strive to do by means of our REVIEW, of the meetings of our Society, by organising lectures to audiences of various types, by the submission of documents to various authorities, and in other ways. Our aim must be to attack along a wide front with the aid of many weapons.

The laws of natural inheritance supply a means of predicting in a measure the qualities of offspring when the qualities of their parents are known; and if our Society accepts heredity, not as its sole guide, but as a light ever to be held in view, we are in fact intending to rely to some extent on these laws of natural inheritance when attempting to forecast the results in the future of our actions of to-day. Genetics is the pure science which deals with heredity, and genetics is, therefore, the very foundation on which the superstructure of eugenics is

being built. The students of genetics will, however, I am sure all agree that a vast amount of research is needed before they will be able to rest satisfied with the knowledge they have acquired, supposing it to be possible that such a state of contentment will ever be reached. Now it is impossible to conduct the needed breeding experiments on human beings, and genetic research must be largely concerned with the lower animals and with plants; whilst eugenics is primarily concerned with man alone. Then again eugenics must include the study of many social and economic problems which lie quite outside the sphere of genetics. The pure science of genetics and the applied science of eugenics do, therefore, cover different fields, though the boundary between them is ill-defined and moveable; and in both fields further advances are urgently needed. For these reasons it seems to me—though here opinions may differ somewhat—that the main aim of our Society, whilst leaving geneticists to cultivate their own ground, should now be to formulate a sound eugenic policy based on existing genetic knowledge and then to promote the translation of every advance in eugenic theory into general practice. In this way we should be strengthening what is now the weakest link in the chain on which we have to rely in our efforts either to facilitate the adoption of reforms tending to promote racial progress or to widen the area over which such reforms may be justifiably extended.

With regard to much of the research work which is so urgently needed, our Society has indeed no option but to leave it to others or to leave it undone; for in many lines of enquiry a well equipped laboratory and a highly skilled staff are essential for success. Certain investigations, which need no special apparatus, however, could be carried on anywhere; and, in the discussion which will follow, I hope that examples will be given of enquiries of this kind which are now only held up for want of funds. Moreover the scientific material as received from geneticists often needs to be thoroughly discussed by eugenicists in a scientific spirit before being applied to human affairs; and in short we cannot rely wholly on genetic research for the supply of scientific material on which to build. May we not hope that from time to time some wealthy patriot will perceive that by his wealth he might help to promote the acquirement of that knowledge on which the racial progress of his nation must depend in the future? If so our Society might certainly play a useful part in suggesting to him various directions in which, with his aid, advances of great value could at once be made; and we could also, if he so desired, act as agents by whom the investigator would be selected and employed, care being taken not to hamper him with undue control. The more liberal the benefaction the more fundamental and far-reaching might be the researches thus undertaken, and the greater the ultimate benefit to mankind.

As to the first of the suggested lines of advance, that is as to getting into direct and immediate touch with the public with the hope of spreading abroad a general knowledge of the laws of natural inheritance, this knowledge should form the basis of all the arguments brought forward at public lectures on eugenics, that is at lectures not forming part of any extensive series. It is indeed in laying this foundation of scientific truth that speakers on such occasions encounter their greatest

difficulties; for many prejudices arising from ignorance have to be overcome. For example, those who do not acknowledge to themselves that men differ greatly from each other in their inborn qualities, cannot be made to realize the extreme importance of paying attention to heredity in regard to social questions; and the acknowledgment that we do not start even in the race of life will be hindered by a disinclination which we all feel both to regard any human disabilities as being incurable and to own that other individuals may be greatly superior to ourselves. As to the facts on which the scientific theories of heredity are based, it is worse than useless to attempt to give them in detail at single lectures; for lecturers should remember that on such occasions they cannot hope to do more than leave an enduring *general* impression on the minds of their audiences. Except in systematic courses of study, much must always be both stated and accepted on authority; for to fully justify all the beliefs of eugenists would require months rather than days. "It is hardly possible," so my father declared, "within a moderate compass to impress on the minds of those who have not attended to the subject, the full conviction of the force of inheritance which is slowly acquired by rearing animals, by studying the many treatises which have been published on the various domestic animals, and by conversing with breeders."* If this be so, the public can only learn how to give to natural inheritance its proper value by acquiring information at second hand; and yet to make any statement acceptable to audiences, it must be in some degree endorsed by their own reasoning powers. It is on this account that allusion to the breeding of domestic animals becomes almost a necessity in public lectures on eugenics; for the wisdom of attending to breed in the case of cattle and dogs is universally admitted. Great care should, however, always be taken to indicate that, though our experiences in the stockyard enable us better to understand the laws of natural inheritance, yet our reliance on these laws carries with it no implication whatever that the methods of the animal breeder ought to be introduced into human society. It should in fact be most strongly emphasized that nothing which we advocate is contrary to the highest religious ideals. This is, however, rather a digression; for I am not here to instruct lecturers how to lecture. All that I now wish to insist on is that by means of lectures to audiences of all kinds the endeavour to spread abroad sound impressions concerning the force of natural heredity and the enormously important part which it plays in deciding the welfare and the destiny of nations, should form a prominent part of our programme.

At this point the pertinent enquiry may well be made as to why, if holding these views, we are not constantly organising public lectures. The main answer to this question is simple enough, namely 'lack of funds. If a lecture fund were to be endowed by some generous patriot filled with a wish to maintain the greatness of his country in the future, more extensive operations would soon be started. Even then our difficulties would not vanish suddenly; because lecturers are not found ready made, and there must be a fair prospect of continuous work

*Animals and Plants under Domestication. Darwin I p. 447-448.

before anyone will take all the trouble involved in qualifying for the task. Voluntary lecturers have given great assistance in the past, but their services have become more difficult to obtain since the war—one amongst its many dysgenic influences. I hope that this important topic may be developed in the discussion which will follow.

The title selected for our Society by its founders was the *Eugenics Education Society*, and certainly they had excellent reasons for thus emphasising the educational aspects of the eugenic campaign which they were inaugurating in this country. There is no class of the community which it is more important to interest in racial problems than teachers of all grades; because the ideas of the youth of to-morrow will depend so largely on the opinions of the teachers of to-day. But teachers must be taught before they can take a thoroughly intelligent interest in racial questions; and for this reason it is of primary importance that biology should be given adequate recognition in the curricula of all training colleges. Complete success in this endeavour would not, however, nearly satisfy all our educational aspirations; for to succeed finally in the first of our main aims, namely the spreading abroad widely of a general knowledge of the laws of natural inheritance, natural science must be given a far more prominent place than at present in the courses of studies of all schools and colleges. No doubt there are many who now regard our efforts with great distrust; but those who feel thus should remember that the better and the more widespread the teaching of biology the more certain would it be that any eugenic errors would be detected and their harmful influence prevented. Again if we want progress in scientific research to be both rapid and on right lines, it is important that a considerable number of students should be thoroughly trained each year in genetics, or that more undergraduates should specialize in Natural Science at our Universities than at present. Eugenics has a long struggle before it, and we must never forget that all these efforts to lay educational foundations for future progress come well within the scope of our endeavours.

Passing on to the second of the main lines of advance to the consideration of which the efforts of our Society should be devoted, what we want to know is the rules which ought to guide each individual in deciding on his own voluntary actions in all matters relating to racial progress. The attempt to ascertain the precepts by means of which each one of us should strive to regulate his own conduct in questions connected with parenthood obviously involves the consideration of a number of ethical, racial and economic factors; for in regard to any proposed line of conduct, we have to weigh in the balance as well as we can its moral effects, the benefits or injuries which it will confer or inflict on the race in the future, and the immediate material advantages or disadvantages to the family and to the State which are likely thus to arise. Even if these problems be approached in a calm and scientific spirit—and in this respect our Society should strive to set a much needed example—even then it will be exceedingly difficult in most cases now to arrive at precise conclusions. We must not attempt in the present state of our knowledge to lay down rigid rules of conduct, but only to suggest general guiding principles; though we may hope that with every advance of science it will be possible more and more

clearly to indicate what each individual ought to do and what he ought to avoid. As an illustration of the difficulties involved in these problems, consider the case of a contemplated marriage when both families thus to be connected are characterised by some degree of ill health. Now it would only be persons endowed with high moral qualities who would be likely to obey any self-denying ordinance in regard to marriage and whose fertility would, therefore, thus be diminished. Might we not, by condemning marriage in such cases, tend to breed out the most valuable of all human attributes, namely the desire to do right? If insanity were the family trouble in question, this being one of the most grievous of all human ailments, we now know that it is sometimes the result of disease and probably in such cases not heritable, whilst other types certainly do run in families. What are we to do in the face of such doubts and difficulties as these? Are we to admit our incapacity to meet the situation? Certainly not, for the history of scientific research clearly proves that what to-day appears like an impenetrable barrier to further progress will probably to-morrow be regarded rather as a useful stepping stone for a further advance. Doubtless we have difficulties ahead of us, which must be faced with patience; but we should take note of these obstacles in our path mainly as emphasizing the need for a society where such guiding rules for voluntary conduct in relation to parenthood as are warranted by existing knowledge and by present needs will be wisely and temperately discussed.

A comparatively new subject like eugenics is apt to arouse prejudices and to give opportunities for misapprehension; and it sometimes seems that what is now most needed in regard to voluntary actions is that the Society should make clear what it is *not* recommending. We have been accused of wishing to abolish love altogether as a guide to conduct; but this is false. What we desire is rather to purify love, or to clear away all those harmful influences which so often attach themselves to it. Certain American investigations indicate that the ideals which naturally dwell in the minds of young people in regard to the qualities of the mates to whom they would wish to be connected in marriage are on the whole fairly sound, and that these promptings if followed would generally lead to unions beneficial to the race. But the desire for wealth, the wish to rise in the social scale, and some would add too great attention to personal appearances, often make the choice of a mate far worse than it would have been if these natural ideals had been given full sway. In passing I must, however, put in a racial plea for good looks on the ground that they are apt to be associated with good health; a plea which I hope does not spring from a mere masculine weakness on my part. Be that as it may, love is doubtless to a large extent aroused by advantageous moral and mental qualities; and, in so far as that is the case, it forms the firmest foundation on which to base a eugenic policy. Much can be done to help to lay this foundation by promoting suitable opportunities for the meeting of young men and maidens; by judiciously encouraging intercourse between our children and worthy friends of the other sex, from amongst whom worthy mates are not unlikely to be selected; by stimulating a pride of family in so far as dependent on character and performance; and, above all, by fostering the growth of all that is noble in the ideals

of the adolescent. Never make a close friend of a person one cannot respect is, I believe, not only a helpful rule of life, but also a useful way of setting an example to the rising generation. But here a possible racial danger must be noted; for an injudicious pursuit of the policy here suggested might make the high minded become self-righteous and therefore less likely to marry than their more ordinary companions, with obvious dysgenic consequences. Pure love between the sexes should be proclaimed as the noblest thing on earth, and the bearing and rearing of children as amongst the highest of all human duties. Some risks ought to be run in order to secure these joys and to fulfil these duties; and cupid may well remain a little blind to all minor defects. To promote these ways of regarding sexual problems, and to show how often the moralist unknown to himself is in effect striving to better the racial qualities of future generations, comes well within the scope of our endeavours.

Though we have seen that as knowledge increases so the difficulties of deciding on rules of personal conduct will diminish, yet it is certain that these difficulties will ever remain very formidable. We may now boldly assert that when the heritable defects of many members of a family are very serious, those belonging to it should not become parents; but how serious must these defects be before being regarded as a bar to parenthood? It will never be possible to draw as sharp a line of demarcation as that between sheep and goats when marking off from the general population those in whom parenthood would be a moral offence. Because of this impossibility, it may come to be held that the size of the family should vary with the innate qualities of the parents; but how is this relationship between fertility and transmissible characteristics to be determined? Then again, many who take no thought concerning racial questions now hold strongly that it is wrong to bring a child into the world without a reasonable prospect of its being able to live a life up to a certain standard of civilisation. But what should be the standard adopted? In large numbers of cases the cause which has prevented the winning of a 'standard' livelihood, however we may define that term, has been some inborn defect, or defect which would in a measure be passed on to the next generation. Teach those not living up to standard to regulate their conduct with due regard to the welfare of any children who may or may not be born in the future, and many would limit their families on this account; with the results that these harmful innate defects would appear less frequently in future generations. Is it not, therefore, of great importance that some attempt should be made to ascertain what standard of living does justify parenthood? Again it is even more important that it should be widely felt that it is morally wrong to limit unduly the size of the family when parents are up to 'standard' in all respects; for it is essential for the welfare of mankind that the seed of this good stock should not be lost to posterity. Our Society should, in my opinion, steadily keep in view the necessity of trying to solve all these intensely difficult problems; problems which need the joint consideration of the eugenicist, the geneticist, and the economist for their solution. But as for our advice of to-day with regard to personal conduct, we can say little more than that moral principles must always be kept in the fore-

ground, and that, for the rest, trust must be placed in common sense and a wise doctor.

To whatever extent success may attend our efforts to lay down rules for personal conduct in regard to parenthood, to that extent we shall have succeeded in deciding on the directions in which we wish to advance in these matters. Such decisions will, however, prove to be but a very uncertain indication of the extent to which the State should endeavour to promote or to enforce obedience to these rules; this being the subject to which we must now turn our attention. By promoting uniformity of conditions and by checking individual initiative, the State may retard progress in certain directions; and, besides affecting those intended to be affected, government action nearly always produces on other persons various consequences which were unforeseen and which are never fully realized. Whatever may be our political opinions, we nearly all of us agree that these are dangers which must be taken into account when contemplating State control over the individual. These are, however, large issues which some will regard as lying outside the proper scope of eugenic considerations; whilst the point which I especially wish to emphasize in this connection is one definitely related to our action as a Society. In my opinion we ought to be ready to encourage discussion on all proposals for relevant reforms, whilst as a *Society* we should be cautious in the present state of our knowledge in actually recommending *governmental interference*. If discussion be not bold, progress will be slow; for a nation cannot grope its way quickly in the darkness of ignorance. If action be too bold, progress will also be slow; for the wrong road will often be taken. In matters of conduct we should balance the *probability* of good or evil arising from the action proposed to be taken, as against the *magnitude* of the good or evil if it does arise. The smaller the chances of failure, the smaller may be the benefits hoped to be attained. The probability of harm resulting from the mere discussion of any reform would usually be very small, even if that reform would be very harmful if adopted. On the other hand, the possibility of benefits arising from the discussion of reforms is almost equally obvious whether the proposed legislation would in fact be beneficial or harmful. To take a single example, there are strong differences of opinion as regards sterilization; but all may hold that by open discussion true conclusions would most likely be reached. The advocates of sterilization of course wish to have this subject brought to the notice of the public; whilst its opponents must admit that they will be more likely to promote than to retard its introduction by, as it were, burying their heads in the sand like the ostrich and by refusing to favour the creation of opportunities for openly stating their objections to it. It is indeed nearly true to say that every subject may be openly discussed with advantage *provided the occasion be properly chosen*; and it is in this spirit that our REVIEW and our meetings should, in my opinion, be conducted.

In all human affairs we are constantly being compelled to take opposing considerations into account and to adopt compromises; and I think that I ought not to be accused of inconsistency if I now turn round and show why our Society ought not to be too timid in regard to legislation. There is hardly anything which your middle aged Anglo-

Saxon dislikes so much as having to change his opinions; and from this weakness men of science are by no means exempt! Here is a barrier which will stop any half hearted attack! To students of natural sciences at all events we can suggest that Nature's plan seems to have been to stamp out of existence all organisms which fail to fill the places she assigns to them, and this without regard to the sufferings thus caused or to the superiority in many respects of large numbers of the individuals thus eliminated. By adopting rational methods in human affairs, much can be done and much ought to be done to avoid suffering similar to that which animals in the wild have to endure because of that struggle for existence to which they must submit; but nevertheless we should not be quite blind to the example set to us by Nature in her readiness to sacrifice the individual for the sake of the race. Unfortunately it will be our politicians who will mainly settle how far the teachings of science shall be made to affect legislation; and this they will be apt to do with little reference to the opinions of experts and largely in the hope of catching votes. But the votes of future generations cannot now be caught, and their interests will, therefore, be likely to receive but scant attention in all democratic countries. Governments which depend on the suffrages of the people are of necessity always somewhat timid in regard to unpopular reforms; and until eugenics becomes popular—when will that be, I wonder!—there is not the slightest chance of eugenic reform moving forward with too rapid strides. Eugenists must lead the advance in racial questions, and our Society must remember that nothing is more fatal to leadership than a show of timidity. We should discuss long and freely, and when we do advance, advance boldly.

Legislative reforms can seldom be effectively promoted or steadfastly maintained unless they are sanctioned by the general opinion of the citizens concerned; and on somewhat similar grounds our Society must avoid taking corporate action in regard to legislation unless the proposal in question has the nearly unanimous approval of our members. The neglect of such warnings may lead to the disappearance of governments or the disruption of societies. Where compulsion is not concerned, unanimity is more probable; and your Council's action in agitating in favour of reforms in the methods of income tax assessment in order to promote fertility in a useful class of the community was, I believe, unanimously endorsed by you. In this instance we are justified in holding that that agitation produced definite and beneficial effects.. No doubt the more legislation involves compulsory interference with the individual, the less ready will our members be to back it. But in regard to the Mental Deficiency Bill, by means of which the segregation of the feeble-in-mind was sanctioned, when we knew that our action as a Society in backing that measure would meet with your approval, then our advocacy was pushed forward unhesitatingly. In regard to other reforms based on compulsion, it may not now be wise to act, the opinion of our Society not yet being ripe for it. Personally I should like to see practical steps advocated for lessening the fertility of habitual criminals, of hopeless wastrels, and of the grossly unfit generally; and others doubtless wish to advance in other directions. My object for the moment is not, however, to

attempt to survey all the roads by which advances may be made in future, but to consider what should be the broad principles of strategy which should guide our Society in the long fight before us in our attempts to promote racial progress.

Eugenics aims at increasing the rate of multiplication of stocks above the average in heritable qualities, and at decreasing that rate in the case of stocks below the average. But if the banner under which we are to fight is only to have inscribed on it some such arid definition of policy as this, our defeat will be certain. We can show that our aims have nothing sordid in them; for certainly we put moral qualities first, mental qualities second, and physical qualities last of all in the order of importance. What we are striving to do is to inspire every citizen with a keen sense of racial responsibility so that all his actions shall be powerfully affected by it, and in this and in other ways there are innumerable opportunities of now improving the lot of future generations. We must also let it be known how the eugenic ideal sprang into activity in recent years when science began to teach us that man had been slowly evolved from some ape-like progenitor, and when it thus endowed us with the hope that this upward march of mankind might be continued for long in the future. But science when giving us good grounds for hope, also issued a grave warning concerning the danger of national deterioration resulting from the unchecked multiplication of inferior types. A determination that a downfall from this cause shall not be the fate of our nation if we can help it must be a sentiment felt by all who are guided by the eugenic ideal. And the eugenic ideal is indeed a most noble ideal, for it aims at the improvement of the welfare of mankind in all the vast ages yet to come.

MR. R. DIXON KINGHAM: The last few years have provided us with a liberal education in the power of propaganda and in the methods of propagandists. While we may not be disposed wholly to agree with the distinguished soldier who asserted that, in speaking of the Government propaganda of rival nations, time would be saved and the interests of truth better served by substituting the word "lies" for "propaganda," it is perhaps true that our respect for the *power* of propaganda as we knew it during the war was greater than our respect for the methods of the propagandists.

That, however, should not deter sensitive and scrupulous souls from recognising the fact that progress in the popularisation of any ideas will depend in very large measure upon the skill and the vigour with which the propaganda on their behalf is carried out.

Now the methods of propaganda are many and various. Hitherto this Society has relied almost exclusively upon lectures, upon the publication of the *REVIEW*—which is, of course, read mostly by the converted—and upon the Summer Schools held at Oxford, Cambridge and Herne Bay, where extremely valuable work was done. All questions of expense apart—and let us not forget that propaganda is a very expensive business—it will, I think, be generally agreed that the Society's propaganda in the immediate future should follow very largely its present lines. The best eugenist among us would, I fancy,

experience no little difficulty in drawing up a really effective eugenic poster of the "Swat-that-Fly" type. In our particular field of endeavour there is, I fear, no short cut to success.

The main activities of the Society upon its propaganda side are, therefore, likely to lie in the direction of the organisation of general lectures and of courses of instructional lectures, and the provision of lecturers to any Society, Club or Institution, large or small, in any part of the country, whose members desire to learn a little or a lot about Eugenics. With regard to the latter activity, the Society should make it its business, not only to provide lecturers when they are asked for, but also to see to it that they are asked for,—to take steps to create the demand wherever it does not exist.

For the object of this Society is to make eugenists, and to make them as rapidly and in as large numbers as possible. As to the best methods of achieving that object, opinions will doubtless differ. Opinions will also differ as to the degree of satisfaction which we are entitled to feel at the results so far obtained in that direction. Personally, I am inclined to think that in the past the Society's propaganda has appealed too exclusively to the intellect and not sufficiently to the emotions. Our confidence in the rationality of man has been very rudely shaken of late, not only by events, but also by recent developments in psychology. I am not now concerned to argue whether it is desirable or undesirable that the motive power behind conduct should be emotion rather than reason. I am only concerned to plead for a full recognition of the fact that it is so by those who are responsible for eugenic propaganda. The day may come when the study of Mendelism, let us say, will profoundly stir our more rational descendants. But most emphatically that day is not yet. The men and women with whom we have to deal are so constituted that I doubt very much whether they are capable of responding even to an appeal in the interests of such an abstraction as "the race." I am quite certain that dissertations or articles dealing with experiments carried out upon the speckled hen or the water flea will leave them utterly unmoved, although the results of those experiments may have the greatest value for biology.

Happily for Eugenics, the one thing which stirs the average man and woman more deeply than any other is the sight of a child being brutally ill-treated. And surely no ill-treatment can be greater than that involved in an inheritance of serious mental or physical defect. In our attempt to make eugenists we should, I submit, be well advised to lay the greatest possible emphasis upon the fact that one of the functions of Eugenics is the guardianship of the unborn. Men and women who will not pay the slightest attention to biological arguments, will respond readily and act vely to the eugenic appeal in the interests of the child.

It is doubtful whether the history of human thought can furnish a more remarkable example of rapid development in a particular direction than that revealed by a study of the growth during the last 100 years of our concern for the well-being of the child. There is no time to trace that development in detail; but some indication of the advance which has been made can be gained by a single reference. In

1847 Parliament passed a Bill to limit the hours of labour for children in mines to 10 per day. The nation might work its children 10 hours a day in mines, but it must not work them more—that was regarded as a triumph of Reform in 1847!

In more recent years, through such Acts as the Notification of Births Act, and in the establishment of such Institutions as Baby Clinics and Schools for Mothers, there has been evident a tendency for our concern for the well-being of the child to approach nearer and nearer to the source of life. I do not suggest that we may yet regard the world as a fit place for children to be born into, but only that our desire, our determination and our effort to make it so have during recent years been increasingly manifested.

Those eugenists whom Professors Thomson and Geddes have distinguished by the title "Herodian" may feel compelled to deplore the effects of some of the legislation and philanthropic effort to which I have generally referred, as being dysgenic. But we might as well try to keep back the incoming tide with a hand-broom as seek, by murmuring "dysgenic," to stay the exercise of those impulses of pity and protection which prompt such activities.

We shall, I maintain, be displaying a greater wisdom if, recognising the fact that from one point of view Eugenics itself is the quite natural and inevitable outcome of those same impulses, we are at pains to harness them consciously to its service.

At the present time the law punishes and public opinion execrates the man or woman who brutally thrashes a child; while neither the law nor public opinion raises its voice against the far greater atrocity of carelessly begetting damaged lives. The cruelties to children which Eugenics would prevent are, I hold, the greatest that can be inflicted. It should be by no means an impossible task within a few years effectively to rouse public opinion to a realisation of that fact.

You will remember that Galton wrote, "Man is gifted with pity and other kindly feelings; he has also the power of preventing many kinds of suffering. I conceive it to fall well within his province to replace Natural Selection by other processes that are more merciful and not less effective. This is precisely the aim of Eugenics." If we accept that statement, we are surely justified in relying upon "pity and other kindly feelings" to lead men and women to exercise their "power of preventing many kinds of suffering" through the practice of Eugenics.

I say the practice of Eugenics, because, although according to the definition upon the cover of the REVIEW, Eugenics is "the *study* of agencies under social control that may improve or impair the racial qualities of future generations," we are, I take it, concerned ultimately with conduct, the conduct of the average man and woman, upon which the triumph or the failure of Eugenics must depend. Those who have ever tried to talk Eugenics in public will, I think, be disposed to confess that there have been times when they experienced a feeling of dissatisfaction with what they were able to say regarding positive eugenic action. When people ask us, What is the programme of Eugenics? What do you want us to *do*?, it is somewhat difficult to give a sufficiently definite answer to satisfy the practical man. While we are pre-

pared to name certain things which people should not do, we are not prepared to tell them with equal confidence what they should do. The state of our knowledge is such, that the formulation of a constructive eugenic programme is largely a task for the future. I am not certain that such a condition of affairs is wholly disadvantageous. It might not assist the progress of Eugenics if eugenists were to display a disposition to join the already large army of those who "rush in." At all events there is plenty of work for this Society to do in the interval. If we cannot yet tell people what to do, we can tell them what to feel; and as feeling precedes doing, our success in influencing conduct will probably be determined by our previous success in influencing sentiment.

As to the success ultimately to be achieved in both endeavours, we may be profoundly optimistic. Why? Because the eugenist is in the singularly happy position of being able to make his appeal directly through the emotion conditioned by one of the strongest instincts in man, namely, the parental instinct to cherish and protect helpless young.

I presume that everyone here is familiar with McDougall's study of the parental instinct and its significance for human society contained in his "Social Psychology." I must this afternoon content myself with the assertion that the impulse to respond to the demands of Eugenics in the interests of the child exists, so to speak, ready-made in human nature. We have not to create the response; we have only to awaken it. What McDougall himself describes as "the most powerful of the instincts" is on the side of Eugenics, not against it. Right up the scale of life the parental instinct has effected increasingly profound modifications of parental behaviour as the period of dependence of the offspring upon the parent has grown longer; and as the whole burden of the eugenic appeal, at its simplest, is that the men and women of to-day should so modify their actions as to benefit and not to injure their potential offspring, there is, I think, some justification for regarding Eugenics as the expression in consciousness of a process hitherto unconscious.

It may, I fear, be thought by some that my treatment of the subject this afternoon tends to belittle the importance of Eugenics as a science. I am not wholly ignorant of Eugenics in its strictly scientific aspect, and I should regret it if anything I have said were to seem to lay me open to a charge of underestimating the value of, and the necessity for, biological and statistical enquiry into the problems with which we are concerned, and the importance of publishing far and wide the results of those enquiries. That was not my intention.

In opening the discussion upon the propaganda activities of the Society, I have merely endeavoured to emphasise an aspect of our appeal which I hold to be of supreme importance in the making of eugenists. The task of Eugenics is not an easy one; chiefly on account of the strength of the existing sentiments, individual and collective, which surround love, marriage and parenthood. We cannot, therefore, afford to ignore any means of giving those sentiments a eugenic bias. And I suggest that there is ample justification for believing that one of the surest means of achieving that end is by directly appealing to those

impulses of pity and protection whose expression, under the guidance of far-sighted intelligence, we are surely right in regarding as the real test of civilization, and its hope.

MR. FISHER: As the name of our Society indicates, we are an Education Society, and it might be thought in these days of specialisation that an Education Society has no business to concern itself with original research. But as I understand the term, the education which is needed in Eugenics is of a double-edged kind; we have not only to call the attention of the public to the principles of Evolution, and to the facts which Genetic research has revealed, but we have also to call the attention of men of Science and of research workers in Genetics in particular, to the peculiar practical importance in human affairs of the facts, which they alone are in a position to ascertain. For this reason I welcome the adoption by the Eugenics Education Society of a Research Policy, and particularly so because for two or three years now I have been considering a problem, of great practical consequence to eugenic teaching, upon which I now perceive that a definite scientific attack is not only badly needed, but likely with moderate expenditure to yield precise and definite results.

I refer to the question of the Genesis of human twins. Readers of Galton's "Inquiries into Human Faculty" will be aware that in Galton's opinion human twins originate in two distinct ways; in the first place two separate ova may be fertilised and develop simultaneously, as no doubt occurs with the majority of animals who have a number of young at birth. Genetically such twins should be no more alike than ordinary brothers and sisters, save that they are of the same age, and consequently they are often spoken of as fraternal twins. In the second place it was supposed that a single ovum, after fertilisation in the usual manner by a single spermatozoon occasionally divided into two, giving rise to two distinct embryos; such twins should, as far as our present knowledge extends, have identically the same heritable factors, they should always be of the same sex, and consequently they have been termed identical twins.

Now it is clear that, if this theory of the dual origin of twins is well founded, it is, as Galton saw, of the highest importance in eugenics. In eugenic discussions we continually wish to know of how much importance are each of the different factors to which differences between human beings may be ascribed. We want to know how much difference heredity makes, how much difference uterine environment makes, how much difference is made by the subsequent environment of the child; and we need to be able to estimate the relative importance of each of these factors, with respect to each quality of mind or body which is under discussion. Now if we could compare a group of fraternal twins with a group of pairs of ordinary brothers and sisters, we should have direct light upon the question of uterine environment. If we could study even a few pairs of identical twins separated at an early age and brought up in different circumstances we should have a direct and crucial experiment as to the importance of upbringing. In these and other ways the study of twins should afford the clearest guidance to the Eugenist in the problems which face him, and the simplest possible facts ready to the hand of the eugenic educationalist.

■ But the further the facts are examined the more difficult is it to accept the simple and attractive theory of the dual origin of twins, which I have outlined. The difficulty begins when any attempt is made to estimate the proportions in which these two types of twins occur. If there is any sufficient evidence of the existence of these two separate types of twins, there must also be evidence sufficient to determine what percentage of twin births are identical twins. Now I find that biologists hold very different opinions as to this percentage. Some think that the percentage is large, some that it is exceedingly small. It was in this connection that I first began to examine the evidence.

In the first place the percentage of identical twins has been estimated from the sex distribution. All identical twins should be of like sex, fraternal twins should be of like and unlike sex with equal frequency. Very extensive records from the German Empire show that about three pairs of twins out of eight are of unlike sex, from which we should infer that twenty-five per cent. of all pairs of twins are identical. In the second place the percentage may be estimated from an examination of the foetal membranes, for it is believed that identical twins may be distinguished by the singleness of the chorion; the results of Weinberg and Ahlfeld in applying this method give distinctly lower percentages, which are not mutually in agreement. The difficulty of this type of investigation may be illustrated by quotation from a recent paper by C. B. Davenport,* an adherent of the orthodox view as to the dual origin of twins, he says "I find that, admirable as are the records of lying-in hospitals in this city, they are frequently unreliable in their statement of the number of chorions. Thus, not infrequently twins of different sex are said to have one chorion." Now the theory of the dual origin of twins breaks down at once if it be admitted that twins of unlike sex may have only a single chorion; and Davenport therefore assumes that in those cases the observers were in error. It is clear either that the difficulties of this type of observation are such as to make (as Davenport says) even careful records unreliable in this respect, or that the singleness of the chorion is not directly related to the mode of genesis.

So far the evidence available is vague and unsatisfactory; there is one piece of research, however, which it would seem must clear the matter up. In 1905 Dr. Thorndike had a series of physical measurements and mental tests made upon a group of fifty pairs of twins from the New York schools. From this record it should be easy to say which pairs of twins were identical and which fraternal. Their resemblance in countenance, eye and hair colour, is carefully noted, eight bodily measurements, and as many mental tests were made; and the whole body of data accords with Thorndike's conclusion that no clear line of demarcation exists between "identical" and "fraternal" twins. I have examined Thorndike's data more fully, and in my opinion it constitutes conclusive proof that the great majority, if not every one, of Thorndike's twins, were produced alike. There is no sign of more than one type of origin. Let me give a single instance;

*Influence of the Male on the Production of Twins. Medical Record of New York, March 27th, 1920.

if there were two types of twins; the one showing a higher degree of resemblance than the other; then if we pick out those with the greatest resemblance in one character, say stature, we ought to find in that group a higher degree of resemblance in all other characters. Nothing of the kind occurs; those more alike in one character, or group of characters, are no more alike than the others, in other characters. The coefficient of correlation constitutes a very sensitive test of any such effect; or working it out, it is found to be actually negative, but very close to zero, and within the errors of random sampling. Thorndike's data is conclusive in showing that if there be two types of twin, one is so much rarer than the other, that no appreciable number of cases is to be expected in a sample of fifty.

But another feature of Thorndike's data is equally well marked. The degree of resemblance is sensibly the same for those of like sex and those of unlike sex, and this degree of resemblance is unmistakably higher than that between ordinary brothers and sisters. For the latter we should expect a co-efficient of correlation near to .5, the actual value is near to .8.

Now in face of these results it is open to anyone to assert that all these twins are genetically fraternal, that identical twins are a myth, or a very rare abnormality, and that the high degree of resemblance between twins is due to the effects of uterine environment.

I do not accept this view; it is open to objection on many grounds. It does not fit in with the close connection which exists between the known co-efficients of correlation and the Mendelian mode of inheritance; it is burdened with the necessity of explaining likeness of sex also as a result of uterine environment. But whatever may be said against it, it is the most direct inference which can be made from the facts at present collected. And unless the question can be cleared up on genetic lines, I suggest that that is the conclusion which many reasonable people will adopt. On the other hand if it be true that uterine environment accounts for three-fifths of the differences between brothers and sisters, this is the fact of the utmost importance to eugenis, which it would be of vital importance to confirm.

I therefore suggest that this is a line of research which the Eugenics Education Society should put on their programme. First Thorndike's results need confirmation; in the London County Council schools it should be possible to find as many pairs of twins as we can afford to examine; quite simple measurements will be sufficient to prove or disprove the theory of dual origin. In the second place a number of abnormalities are known to be Mendelian in their inheritance, and there is some evidence that the same is true for eye colour. Facts as to the distribution of Mendelian characters between twins would, in my opinion, lead to definite knowledge as to their mode of genesis. The whole cost of the investigation, including a research studentship for a year, would probably not exceed £500, but as it often happen that one group of facts shows the need of a further enquiry, it is probable that the cost of making full use of the material available in London might be £1,000. Such a single piece of research carefully undertaken, would almost certainly clear up the riddles which the genesis of human twins now present.

MR. LIDBETTER: It has been said that an unwarranted assumption of superiority is the prevailing characteristic of nearly all young organisations. To some extent our Society is not free from the implications of that, for on the educational side we have failed to realise the character of our operations, that is to say we have talked with much emphasis on the subject of Eugenics education to the general public, but have not made proper efforts for the education of our own members. This is particularly so in regard to research, and in any consideration as to the future of the Society the encouragement and organisation of research should form a much larger part than has been the case in the past. In this connection Major Darwin has particularly asked me to mention the question of research in regard to pauperism and heredity. It will be remembered that the Society appointed a Committee some ten years ago to enquire and report on this subject. A preliminary report was presented and certain more or less disconnected investigations followed, but, mainly owing to the war, these investigations had to be dropped and since the war labour and funds have not been available to carry on the investigations, nor indeed what is equally important, to arrange and make available the results of such investigations as previously took place. There is, as a matter of fact, a vast amount of data waiting to be arranged and prepared for publication, from which some 200 to 300 pedigrees, of very great importance in our subject, could be prepared. Teachers, lecturers and others interested in heredity would find this data of very great value if it were arranged and made available for publication. This can only be done by organisation and the provision of funds which are necessary to complete enquiries and prepare for, and pay the cost of publication, but until now it has not been possible to do this work, nor do I see any immediate prospect of it being done. This is, of course only one instance of the need for research and the conducting of our educational campaign, so that not only will the public be influenced, but that we, who are already interested, will have the necessary data upon which alone conclusions on so large a subject can be formed. I very much hope that in any scheme for the future activities of the Society much more attention will be paid to this subject and that meantime some steps may be found to prepare this data to which I have referred, so that those who stand in need of it—as I know a number of the people in the Country do—may have the benefit of this large amount of work which has already been done.